

Intellectual Property Strategies



Basic Policies on Intellectual Property

In the Intellectual Property Division, we see it as our mission to **make contributions to the business through intellectual property (IP) so as to enhance the corporate value of the Toray Group**. Every member of the division is fully aware of it as they engage in their daily activities. The backbone of our wide-range and diverse IP activities is the four basic policies on intellectual property that the entire Group adheres to.

Intellectual property strategies, as a part of the three combined strategies in line with our management principles

The Toray Group regards intellectual property as one of its vital management resources. We have linked our intellectual property strategies mutually and organically with our business and R&D strategies, and as a part of this three combined strategies (business, R&D and IP), we have positioned intellectual property strategies as one of the most important elements of our management strategies.

Promoting the acquisition of rights

In order to protect the Toray Group's products and technologies and to ensure profits, we promote high-quality patent applications and patenting, and strive to build a strong patent portfolio with deterrence capabilities. Regarding trademarks, we acquire appropriate rights with an eye to improving brand value.

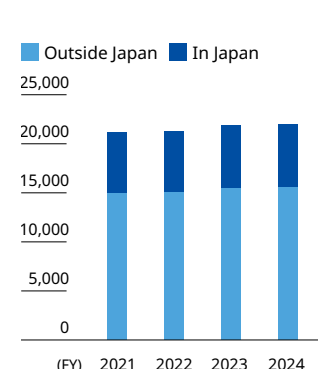
Respecting the rights of others

Toray operates a patent confirmation system to comprehensively investigate the relationship among our products, technologies and patents owned by other companies to assure that there is no infringement upon the rights of other parties. We also check the relationship of our trademarks with those registered by other companies prior to use.

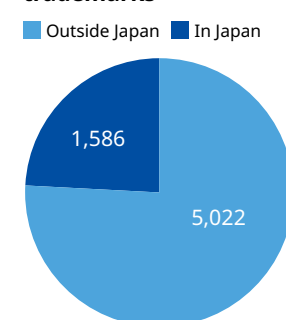
Rightful enforcement of our own rights

When Toray Group's patent rights are infringed upon by another party, we take proper steps depending on the circumstances by exercising our patent rights, such as demanding that infringement cease, receiving monetary profits from licensing, and using our patent rights for cross-licensing with the patent rights of other parties.

Patents held



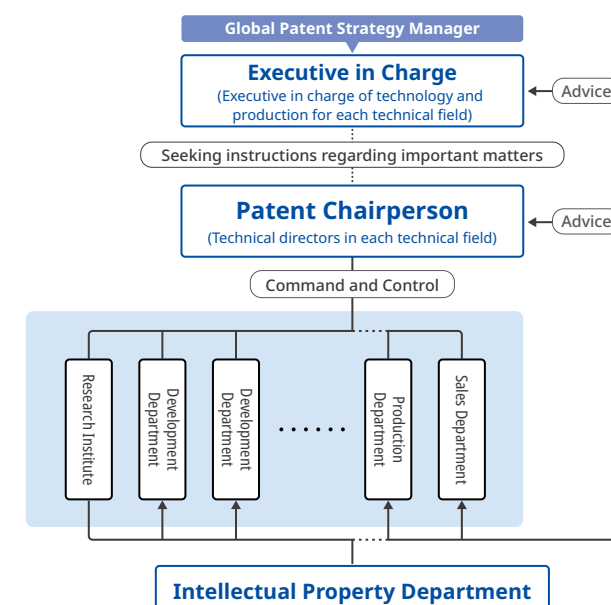
Number of registered trademarks



*Figures are as of the end of July 2025

Formulation and Implementation of IP Action Plans in Our Business Fields

Patent Committee System

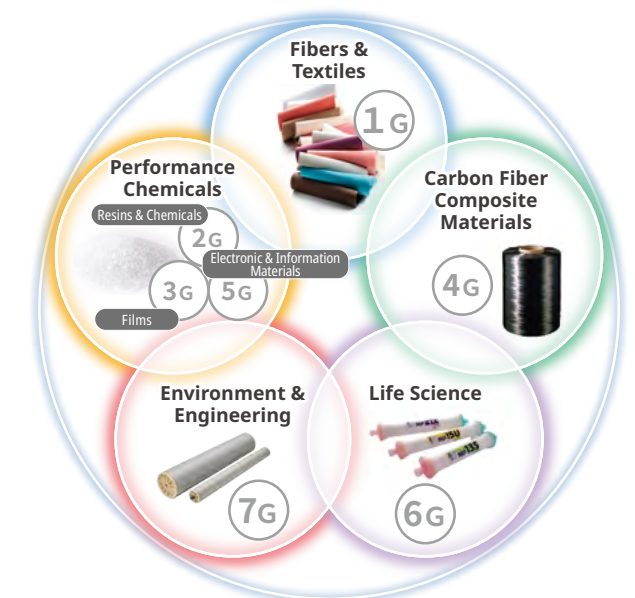


At Toray, we have established a Patent Committee System for each technological field, and we hold **Patent Committee** once every two months. The worksite managers who hold technical responsibility in their respective areas have been appointed as patent chairperson to assume overall responsibility for patent issues that may arise. They execute strategies with reference to expert opinions from the Intellectual Property Division. This system clearly embodies the responsibility for patents, similar to that for product safety. **The Patent Committee System is operated in coordination with the Board of Directors, while the Executive Vice President, who serves as the CTO, oversees both Toray's technology and intellectual property matters in general.** Also, our Group companies in and outside Japan are involved in the Global Patent Strategy Framework by technological field, and work together to promote IP strategies.

For important issues in each technological field, **"IP action plans"** are formulated and executed in collaboration with the responsible executives of each area. In these IP action plans, the issues that are particularly important and urgent for business management are selected as **Rank-A Projects** and addressed by leveraging Toray's comprehensive capabilities in collaboration between the Technology Center and the Intellectual Property Division.

The Intellectual Property Division is organized around a group structure for each of Toray's seven main business fields: **Fibers & Textiles, Resins & Chemicals, Films, Carbon Fiber Composite Materials, Electronic & Information materials, Pharmaceuticals & Medical, and Water treatment & Environment**. We formulate IP strategies based on the business conditions. While making use of **IP landscapes**, we ensure filing and patenting to properly protect our businesses, and confirm and respond to third-party patents that may pose an impediment to business. Members of the Intellectual Property Division possess a **high level of expertise** to appropriately undertake exhaustive IP operations, including patent applications and patenting in each business field, third-party patent countermeasures, and rights utilization. In addition to having over 30 registered patent attorneys, we have numerous AIPE-certified intellectual property analysts (patents) and qualified staff members such as small- and medium-sized enterprise consultants and MBA graduates to broaden our knowledge in management.

Moreover, the **Intellectual Property Division develops global IP activities** and provides support to overseas Group companies by having bases for IP operations in the U.S., Europe, China, and the Republic of Korea. Especially in China, where market expansion has been remarkable in recent years, we have established a dedicated IP department staffed by locally hired employees to effectively promote IP activities in the region.



IP That Contributes to Toray's Wining Pattern

Toray's winning pattern, or so-called **Toray's Value Creation Model**, leverages a value creation engine to build overwhelming barriers to entry and high-added-value that competitors cannot follow. It is a unique value creation model that continuously enhances added-value over the long-term.

Based on intellectual property activities such as our IP action plans, we are effectively creating **intellectual property that supports Toray's winning pattern** and building a patent portfolio that serves as an entry barrier for competitors. For example, in our long-term partnerships with Uniqlo and

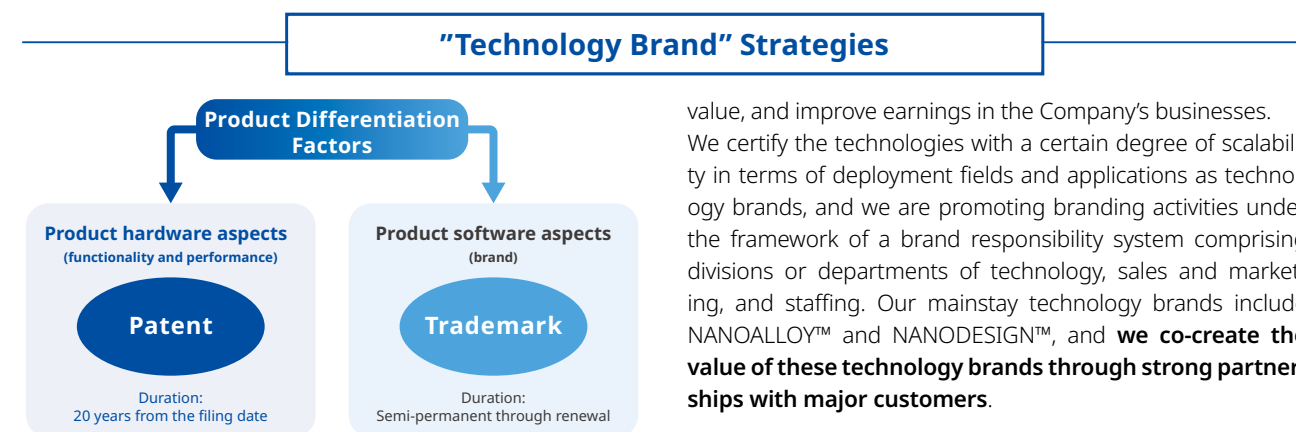
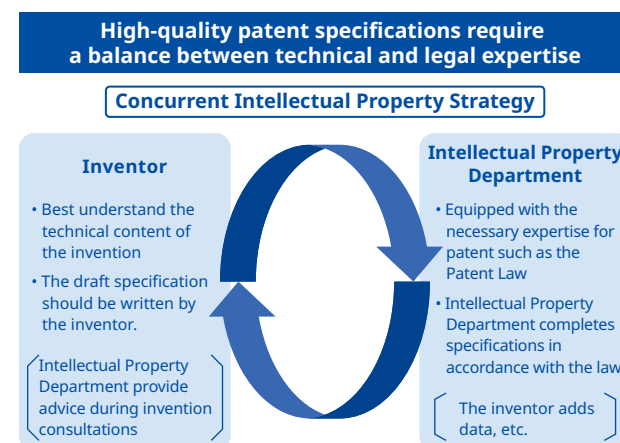
Intellectual Property Strategies

Boeing, the fiber production technology we have developed over the years and our spirit of “**pursuit of the ultimate limits**” have served as the foundation of our relationships. With Uniqlo, for example, we continue to develop new products every year, creating successful products and expanding of production. However, these successful products carry the risk of being copied by competitors with inexpensive, similar-looking products, so we continue to create IP and acquire the rights to maintain the competitive advantage of our products. We have approximately 2,300 patents in the Fibers & Textiles field and over 2,500 patents in the Carbon Fiber Composite Materials Field, thereby establishing **strong barriers to entry**. In recent years, through the development of NANODESIGN™ in the Fibers & Textiles field and adhesive bonding technology for seamless textiles products, we have been able to provide textile materials and fiber products with functions and appearances that were previously unattainable, **building entry barriers through IP for Toray’s superior technologies**.

We believe that it is vital that the creation of inventions and the drafting of patent specifications should be united and harmonized in order to obtain high-quality patents. While companies generally outsource most of the specification drafting to external patent firms, at Toray, we **do it ourselves in line with the “principle of in-house drafting.”** Initial drafts of the specifications are created by researchers and engineers who are well-versed in technical content. Then, they are refined

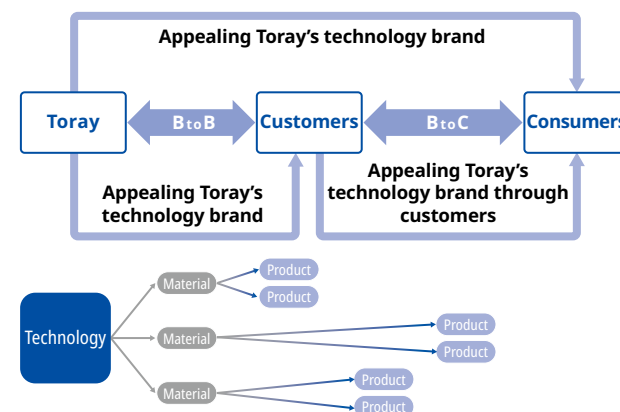
into higher-quality patent specifications by consulting with the Intellectual Property Division about the invention being patented. Members of the Intellectual Property Division advance the work involved, from filing to rights acquisition, in collaboration with the inventors.

Furthermore, we have a **training system that fosters an IP mindset among all employees**, and as a unique initiative, we have established a **Patent Operational Assessment Qualification Test** system for researchers and engineers with the aim of enhancing their IP capabilities by measuring their basic legal knowledge and practical skills related to patents in an effort to develop excellent inventors.



We are pushing forward with a “Technology Brand” strategies that visualizes our unique innovative technologies as brands, effectively showcasing our technological capability and superiority to society and the market. It is an intellectual property mix strategy that aims to set ourselves apart from the competition and strengthen our own competitiveness by securing rights for our unique technologies in the form of both patents and trademarks, and by combining and utilizing these rights. We collaborate with customers who adopt the materials related to our technology brand, and by promoting the brand to consumers who purchase the products, we are aiming to build trust in the brand, enhance brand

value, and improve earnings in the Company’s businesses. We certify the technologies with a certain degree of scalability in terms of deployment fields and applications as technology brands, and we are promoting branding activities under the framework of a brand responsibility system comprising divisions or departments of technology, sales and marketing, and staffing. Our mainstay technology brands include NANOALLOY™ and NANODESIGN™, and **we co-create the value of these technology brands through strong partnerships with major customers**.



NANOALLOY™



Innovative microstructure control technology developed by Toray. Multiple polymers are dispersed and blended at the nano-scale level to achieve an unprecedented level of compatibility for such properties as heat resistance, strength, and impact absorption. Offers remarkable improvements in the performance and functionality of polymer materials.

<https://www.nanoalloy.toray/en/>

Applications: Resins, Carbon Fiber Composite Materials, Films

Case example of adoption

Yonex’s badminton string series, EXBOLT65, utilizes impact-absorbing nylon resin that incorporates NANOALLOY™ technology.



NANODESIGN™



Innovative conjugate spinning technology developed by Toray. In the fiber manufacturing process, this technology can repeatedly divide the flow of polymers and precisely control the fine flow, creating fibers that are up to 1/100,000 finer. The cross-sectional shape of fibers can be freely designed, and multiple polymers can be utilized to create previously unattainable cross sections.

<https://www.nanodesign.toray/en/>

Applications: Fibers & Textiles, Medical devices, Electronic & Information Materials (Optical fibers)

Case example of adoption

Uniqlo’s Pocketable UV Protection Parka features fabric made with NANODESIGN™ technology.



External Recognition

Patent deterrence rankings

Toray has been ranked **number one for 13 consecutive years in the ranking of capability** to prevent other companies from obtaining patent rights published annually by the patent analysis company, Patent Result Co., Ltd., as an indicator of the leading companies in the paper, fiber, and pulp industries. We are ranked third even when the paper, fiber, and pulp industries are grouped together with the chemical industry as a single sector.

(<https://www.patentresult.co.jp/ranking/fcit/2024/fcitpaper.html>)

Patent value growth ranking / overall patent value ranking

Nikkei Business magazine ranked us 15th in its patent value growth ranking, which lists the top 40 companies in Japan based on the growth of patents held over the past two years. In addition, we ranked 33rd in the overall patent value ranking of the same magazine, which indicates the total amount of technological capabilities accumulated by companies. Only 11 companies, including Toray, have been **ranked in both categories of dynamic patents and high-quality, robust patent platform**.

(<https://business.nikkei.com/atcl/gen/19/00747/052800001/>)

2024 National Commendation for Invention

At the 2024 National Commendation for Invention, Toray received the **WIPO Award for the invention of a durable reverse osmosis (RO) membrane with high water permeability, high removal efficiency, and chemical resistance (Patent No. 6032011)**. The President also received the Distinguished Service Prize for Employment of Invention. The awards ceremony was held on July 11, 2024, in the presence

of Her Imperial Highness Princess Hitachi. The reverse osmosis (RO) membranes utilizing the awarded technology are used in plants in over 100 countries worldwide for the production of industrial water, agricultural water, and drinking water, contributing to the provision of safe and reliable water to address water scarcities faced by the international community.



Comment from the inventor

Kiyohiko Takaya

Researcher
Global Environment Research Laboratories



It was a great honor to receive the WIPO Award for this invention, which was created by pursuing the mechanism for improving chemical resistance. Throughout the process, from the application of the patent right to the granting of IP rights, we were able to smoothly progress by holding repeated meetings with the Intellectual Property Division members to align the directions. In the future, we will continue to work closely with the Intellectual Property Division and make every effort to ensure that the results of our research and development contribute to the Company’s business from an IP perspective.